## 50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for Two Florida Lizards

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Proposed rule.

**SUMMARY:** The Service proposes to determine the sand skink (Neoseps reynoldsi) and the blue-tailed mole skink (Eumeces egregius lividus) to be threatened species, pursuant to the Endangered Species Act (Act) of 1973. Critical habitat is not being proposed. A special rule allowing take for certain purposes in accordance with Florida State laws and regulations is proposed. The sand skink is restricted to Marion, Orange, Lake, Polk, and Highlands Counties, Florida; and the blue-tailed mole skink is known only from Polk and Highland Counties. both skinks are threatened by conversion of their habitat for agricultural, residential, and commercial purposes. This proposal, if made final, would implement the protection and recovery provisions of the Act for the two lizards. The Service seeks data and comments from the public on this proposal.

**DATES:** Comments from all interested parties must be received by March 23, 1987. Public hearing requests must be received by March 9, 1987.

**ADDRESSES:** Comments and materials concerning this proposal should be sent to the Field Supervisor, Endangered

Species Field Station, U.S. Fish and Wildlife Service, 2747 Art Museum Drive, Jacksonville, Florida 32207. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: David J. Wesley, Endangered Species Field Supervisor, at the above address (904/791–2580 or FTS 948–2580).

#### SUPPLEMENTARY INFORMATION:

#### Background

The sand skink (Neoseps reynoldsi) was described by Steineger (1910). He established a new genus for this unique lizard, which is adapted to a fossorial (underground) existence. The sand skink is the only North American skink completely specialized for "swimming" through loose sandy soils. The sand skink measures 10-13 centimeters (4-5 inches) in total length and is gray to tan in color. The forelegs are tiny and bear only one toe; the hind legs are small and have two toes. The tail comprises about half the animal's total length. The sand skink has a wedge-shaped head, a partially countersunk lower jaw, body grooves into which the forelegs can be folded, and small eyes which have transparent windows in the lower lids. These features enable the sand skink to "swim" beneath the surface of loose sand. This lizard is known only from the high sandy ridges of Lake, Marion, Orange, Polk, and Highlands Counties, Florida.

The sand skink has been studied by Cooper (1953), Telford (1959, 1962), Myers and Telford (1965), Campbell and Christman (1982), and Smith (1982). Areas occupied by the lizards are primarily vegetated with the sand pine (Pinus clausa)-rosemary (Ceratiola ericoides) scrub or the longleaf pine (Pinus palustris)-turkey oak (Quercus laevis) association. The sand skink spends most of its time beneath the soil surface, burrowing to a depth of 5-10 centimeters (2-4 inches), and it feeds on a variety of small arthropods, principally beetle larvae, termites, spiders, and larval antlions. The species appears to be most active from March to May. Mating occurs during this period, and females deposit two elongate eggs, probably under logs or other cover, in early summer. The female remains with the eggs and probably protects or cares for them (broods).

Sand skinks are host to three endemic endoparasites, including two flagellate protozoans, Monocercomonas neosepsorum and Rigidomastix scincorum and an undescribed species

of oxyurid nematode, *Thelandros* spp. (Telford 1969).

The blue-tailed mole skink (Eumeces egregius lividus) was described by Mount (1965). The species has a long cylindrical body with small legs. It reaches 9-15 centimeters (3-6 inches) in total length, the body making up somewhat less than half this length. The tail is blue in young animals, but may become pinkish with age or if regenerated. The blue-tailed mole skink is known only from Polk and Highlands Counties, Florida. Like the sand skink, it is found in sand pine-rosemary vegetation, or, less frequently, in longleaf pine-turkey oak communities. Little is known about the life history of the blue-tailed mole skink. Mount (1963) provided life history information based primarily on studies of the closely related peninsular mole skink (Eumeces egregius onocrepis). The life history of the blue-tailed mole skink is probably similar to that of the peninsular mole skink. This includes (1) mating during fall and winter, (2) clutch sizes ranging from three to seven eggs which are laid underground in the spring, and (3) the achievement of sexual maturity during the first year. Mole skinks forage on the surface or up to 5 centimeters (2 inches) underground, and feed principally on roaches, spiders, and crickets.

The distribution and availability of moisture seem to be important factors that account for distributional patterns of sand and blue-tailed mole skinks within sand scrub communities. Telford (1959) suggested that food supply and moisture are important factors in the selection of areas by sand skinks within sand scrub communities. He found that skinks did not inhabit substrates where the sand was dry and porous. Rather, skinks were most frequently found in the ecotone between rosemary scrub and palmetto-pine flatwoods where moisture was present beneath surface litter (e.g., bark), and in sand starting at a depth of 2 centimeters (1 inch). These moisture regimes described above may be important for this lizard to maintain internal body temperatures within a preferred range, and they may also provide a microclimate necessary for egg incubation and an abundant food source.

Christman (1978) noted that bluetailed mole skinks were not dispersed throughout seemingly suitable habitat, but rather in localized pockets. He also noted that these skinks were often found under surface litter. Considering Telford's (1959) observation of moisture under litter, the uneven distribution of blue-tailed mole skinks, as noted by Christman, may be a function of the nonrandom distribution of surface litter; moisture associated with litter is probably important for thermoregulation, feeding (abundant food resource), and nesting. The Arizona skink (Eumeces gilberti arizonensis), a lizard that also inhabits areas with sand substrates, is highly dependent on surface litter for occurrence in riparian habitats within the Sonoran Desert; its distribution is closely tied to the occurrence of surface litter (Jones and Glinski 1985).

Although blue-tailed mole and sand skinks can be found together under surface litter within the range of the former, they appear to occupy different microhabitats most of the time (see previous discussion). This conclusion is supported by comparing the diets of the two species; sand skinks eat mostly fossorial invertebrates and mole skinks eat mostly surfacorial invertebrates. Comparison of these two species' diets also suggest that these species do not compete for food.

Sand pine scrub and sandhill areas where the sand skink and blue-tailed mole skink occur are threatened by a variety of factors. These high, welldrained sites are suitable for citrus groves, and residential, commercial, and recreational development. From 1960 to 1978 Florida's citrus production doubled, and most of the increase in acreage for these crops were in southern counties (Fernald 1981). Peroni and Abrahamson (1985) estimated that 64 percent of these xeric upland habitats in the southern Lake Wales Ridge had been converted to improved pasture, cultivation, or housing by 1981. An additional ten percent of the uplands had been moderately disturbed. This trend of land use has continued since 1981, with increased pressure on the citrus industry to move southward down the Florida peninsula following severe freezes during the winters of 1983-1984 and 1984-1985. The Lake Wales ridge includes most of the range of the sand skink, and the entire range of the bluetailed mole skink.

Because of isolation of the higher portions of the Florida peninsula by higher sea levels at various periods since the Pliocene, considerable plant and animal endemism has occurred. The conversion of these upland areas for agricultural, residential, recreational and commercial purposes in recent times has caused the ranges of many endemic Florida plants and animals to become greatly reduced and fragmented.

Eleven federally listed plant species are restricted to Florida's scrub areas: Lakela's mint (*Dicerandra immaculata*), scrub mint (*D. frutescens*), longspurred

mint (D. cornutissima), four-petal pawpaw (Asimina tetramera), pygmy fringe tree (Chionanthus pygmaeus). snakeroot (Eryngium cuneifolium), Highlands scrub hypericum (Hypericum cumulicola), wireweed (Polygonella basiramia), scrub plum (Prunus geniculata), Carter's mustard (Warea carteri) and Paronychia chartacea. The scrub lupine (Lupinus aridorum), another endemic scrub plant, and the Florida scrub jay (Aphelocoma coerulescens coerulescens) have also been proposed for listing. Numerous other plants and animals of Florida's scrub habitats are candidates for Federal listing.

The sand skink and the blue-tailed mole skink were considered Category 2 candidates for listing in the Service's December 30, 1982 (47 FR 58454), and September 18, 1985 (50 FR 37958), vertebrate review notices.

# Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 et seq.) and regulations (50 CFR Part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal Lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to the sand skink (Neoseps reynoldsi) and the blue-tailed mole skink (Eumeces egregius lividus) are as follows:

A. The present or threatened destruction, modification, or curtailment of its habitat or range

The sand skink is known from Marion, Lake, Orange, Polk, and Highlands Counties, Florida. The Florida Natural Areas Inventory has records of 31 sites for this species. The lizard probably also occurs at a few other sites where suitable habitats remain. These habitats, however, have been reduced to a small amount of their original extent, and destruction of much of the remainder is ongoing or likely in the foreseeable future, particularly at privately owned sites. Some degree of habitat protection occurs for the sand skink at the following six locations:

- 1. Ocala National Forest, Marion County—the species is known from several sites, although the distribution is apparently spotty.
- 2. Lake Louisa State Park, Lake County—less than 50 acres of suitable habitat exists at this site.

- 3. Tiger Creek Preserve, Polk County—this site, owned by the Nature Conservancy, supports several hundred acres which may be suitable for the sand skink.
- 4. Archbold Biological Station—this private research institution encompasses about 3900 acres; about 2400 acres are xeric habitats inhabited by the sand skink in varying densities (Dr. James N. Layne, pers. comm.).

5. Wekiwa Springs State Park, Orange County—the status of the sand skink here is uncertain, but there may be several hundred acres of xeric habitat suitable for the species.

6. Saddle Blanket Lakes Preserve—this site, owned by The Nature Conservancy, includes only 55 acres of scrub, but the State of Florida proposes to acquire about 750 additional acres nearby under its Conservation and Recreation Land Program.

The sank skink is likely to occur at Lake Arbuckle State Park and Wildlife Management Area, Polk County, which includes about 13,500 acres; but only a portion of this is scrub.

The blue-tailed mole skink is restricted to Polk and Highlands Counties, Florida. It occurs at many of the same sites as the sand skink, but north of Polk County it is replaced by the peninsula mole skink (Eumeces egregius onocrepis) or by intergrades with that subspecies (Mount 1965, Christman 1970). The Florida Natural Areas Inventory records only 20 sites for this subspecies, but it probably occurs at additional sites where scrub and sandhill habitats remain. Dr. Steve Christman (pers. comm) has found the blue-tailed mole skink to be much less numerous than the sand skink where the two species crexist in scrub habitats. Nonetheless, the total habitat for the blue-tailed mole skink has greatly declined, paralleling the 64 percent decline in xeric habitats of the south Lake Wales ridge documented by Peroni and Abrahamson (1985). Mount (1965) estimated that less than 50,000 acres of habitat for the blue-tailed mole skink remained in the 1960's. According to Peroni and Abrahamson (1985), 23,200 acres of xeric habitats remained in Highlands County in 1981, but not all of this acreage would be expected to support the blue-tailed mole skink. The rates of possible habitat destruction is serious and much of this species' range occurs on private lands. This species is protected on Archbold Biological Station, and it is also recorded from Lake Kissimmee State Park, where its status is unknown. The blue-tailed mole skink is also likely to occur on the protected lands mentioned above near

Lake Arbuckle, Saddle Blanket Lakes, and Tiger Creek.

B. Overutilization for commercial, recreational, scientific, or educational purposes

Both the sand skink and the bluetailed mole skink are unique Florida endemics with limited ranges. They are therefore of interest to both amateur reptile collectors and scientific collectors, although there is currently no known serious impact due to collecting.

C. Disease or predation

No threats are known.

D. The inadequacy of existing regulatory mechanisms

The sand skink and the blue-tailed mole skink are consideed threatened by the Florida Game and Fresh Water Fish Commission (Chapter 39-27, Florida Administrative Code). This legislation prohibits take, except under permit, but does not provide any direct habitat protection to these species. Therefore, the Endangered Species Act of 1973, as amended, would provide additional protection for the blue-tailed mole and sand skinks and their habitat through Section 7 (interagency cooperation), as well as through the prohibitions of sections 4(d) and 9(a)(1) and provisions for recovery planning.

E. Other natural or manmade factors affecting its continued existence

Sand pine scrub and longleaf pine communities are both fire dependent. The sand pine is adapted to fire at long (20-50 year) intervals; the peninsular populations of this tree do not shed seeds until the cones are opened by fire. If fire is suppressed in sand pine scrub, succession to xeric hardwood forest eventually occurs. Because of the large expanses of open sand and the slow accumulation of litter in sand pine scrub, fires occur only at infrequent intervals. Longleaf pine communities are dependent on more frequent fires (1-8 year intervals). Lack of fire will result in these communities succeeding to scrub or eventually to hardwoods. Therefore, lack of fire or changes in land use could eventually eliminate the sand skink or blue-tailed mole skink from localities where they currently exist.

Campbell and Christman (1982) studied the reptiles and amphibians occurring in sandhills and scrub. They suggested that this fauna was not associated with particular plant associations but with physical factors, namely, well-drained sands with open areas free of rooted vegetation. They found that the sand skink and mole skink populations on Ocala National

Forest (ONF) were most abundant in early successional stages of sand pine scrub. The clear-cutting and even-age stand management of sand pines in ONF appeared to have a similar effect to the natural fire regime typical of sand pine. Although both lizards seem to benefit from the opening and clearing of sand pine communities, it may be important to leave widely scattered surface litter when clear-cutting (see earlier discussion on the importance of litter in the Background section).

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by these species in determining to propose this rule. Based on this evaluation, the preferred action is to list the sand skink and the blue-tailed mole skink as threatened species. Neither species is currently in danger of extinction, because both occur on protected lands. Both, however, have already lost substantial portions of their original habitat throughout their range and could decline even on the protected areas where they occur. Both species could become endangered over all or a significant portion of their range in the foreseeable future. Therefore, they meet the Act's definition of threatened species. The reasons for not proposing critical habitat for these species are discussed below in the "Critical Habitat" section.

#### Critical Habitat

Section 4(a)(3) of the Act, as amended. requires that to the maximum extent purdent and determinable, the Secretary designate any habitat of a species which is consisered to be critical habitat at the time the species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not prudent for the sand skink and blue-tailed mole skink at this time. Although the primary threat to both species is habitat destruction, the number of localities at which each species occurs is limited. Excessive collecting could adversely affect these skinks. Because of its unusual morphology and behavior, the sand skink could be of considerable interest both to amateur reptile collectors and scientific collectors. Taking prohibitions on these species would be difficult to enforce. Publication of critical habitat descriptions would increase the vulnerability of these species and increased enforcement problems. All involved Federal agencies will be notified of the location and importance of protecting these species' habitat. Habitat protection can be adequately

addressed through the recovery process and through the section 7 jeopardy standard. Therefore, it would not be prudent to determine critical habitat for the sand skink and the blue-tailed mole skink at this time.

#### **Available Conservation Measures**

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State. and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies and the prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Revised regulations implementing this interagency cooperation provision of the Act were published on June 3, 1986 (51 FR 19926). Section 7(a)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) requires Federal agencies to insure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or destory or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service. The sand skink occurs on Ocala National Forest. Present forest management practices (block clearcutting) appear to result in successional changes favorable to the continued existence of the sank skink there (Campbell and Christman 1982). Changes in management practices could result in section 7 consultation between the Forest Service and the Fish and Wildlife Service. This situation already exists, however, because of a variety of federally listed species already occurring on Ocala National Forest.

The Act and implementing regulations found at 50 CFR 17.21 and 17.31 set forth a series of general prohibitions and exceptions that apply to all threatened wildlife. These prohibitions, in parts, make it illegal for any person subject to the jurisdiction of the United States to take, import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that had been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

The above discussion generally applies to threatened fish and wildlife. However, the Secretary has the discretion under section 4(d) of the Act to issue special regualtions for a threatened species that are necessary and advisable for the conservation of the species. The blue-tailed mole and sand skinks are threatened primarily by habitat disturbance or alteration, not by intentional direct taking or by commericalization. Given this fact and the fact that the State of Florida currently regulates direct taking of these species through the requirement of State collecting permits, the Service has concluded that the State of Florida's collection permit system is more than adequate to protect the species from excessive taking, so long as such takes are limited to: Educational purposes, scientific purposes, the enhancement of propagation or survival of these species, zoological exhibition, and other conservation purposes consistent with the Endangered Species Act. Therefore, a special rule is proposed which allows take to occur for the above stated purposes, without the need for a Federal permit, if a State collecting permit is obtained and all other State wildlife conservation laws and regulations are satisfied. Taking of these species for purposes other than those described above, including taking incidental to carrying out otherwise lawful activities, would be prohibited except when permitted under 50 CFR 17.23 and 17.32. This special rule would allow for more efficient management of these lizards. and thus would enhance the conservation of these species. For these reasons, the Service concludes that this regulatory proposal is necessary and advisable for conservation of the bluetailed mole and sand skinks.

General regulations governing the issuance of permits to carry out otherwise prohibited activities involving threatened wildlife species, under

certain circumstances are set out at 50 CFR 17.22, 1723, and 17.32.

#### **Public Comments Solicited**

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, any comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning any aspect of this proposal are hereby solicited. Comments particularly are sought concerning:

- (1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to these species;
- (2) The location of any additional populations of these species and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;
- (3) Additional information concerning the range and distribution of these species; and
- (4) Current of planned activities in the subject area and their possible impacts on these species.

Final promulgation of the regulation on these species will take into consideration the comments and any additional information received by the Service, and such communications may lead to adoption of a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be filed within 45 days of the date of the proposal. Such request must be made in writing (see ADDRESSES section).

#### National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Polciy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endagered Species Act of 1973, amended. A notice outlining the Services's reasons for this determination was published in the Federal Register on October 25, 1983 [48 FR 49244].

#### **References Cited**

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#### Author

The primary author of this proposed rule is Dr. Michael M. Bentzien (see ADDRESSES section).

## List of Subjects in 50 CFR Part 17

Endangered and threatened wildlife, Fish, Marine mammals, Plants (agriculture).

## **Proposed Regulations Promulgation**

## PART 17—[AMENDED]

Accordingly, it is hereby proposed to amend Part 17, Subchapter B of Chapter I, Title 50 of the Code of Federal Regulations, as set forth below:

1. The authority citation of Part 17 continues to read as follows:

Authority: Pub. L. 93–205, 87 Stat. 884; Pub. L. 94–359, 90 Stat. 911; Pub. L. 95–632, 92 Stat. 3751; Pub. L. 96–159, 93 Stat. 1225; Pub. L. 97–304, 96 Stat. 1411 (16 U.S.C. 1531 et seq.).

2. It is proposed to amend § 17.11(h) by adding the following, in alphabetical order under Reptiles, to the List of Endangered and Threatened Wildlife:

## § 17.11 Endangered and threatened wildlife.

(h) \* \* \*

Species					Vertebrate population where			Critical	Special
Common name		Scientific name		Historic range	endangered or threatened	Status	When listed	habitat	rules
Reptiles:	•	•	•	•	•	•	•		
Skink, blue-tailed mole Skink, sand								NA NA	17.42(c) 17.42(c)
	•	•	•	•	•	•	•		

3. It is further proposed to amend § 17.42 by adding new paragraph (c), as follows:

#### § 17.42 Special rules—reptiles.

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(c) Blue-tailed mole skink (Eumeces egregius lividus), and skink (Neoseps reynoldsi). (1) No person shall take these species, except in accordance with applicable State fish and wildlife conservation laws and regulations for educational purposes, scientific purposes, the enhancement or survival of the species, zoological exhibition, and

other conservation purposes consistent with the Act.

(2) Any violation of applicable State fish and wildlife conservation laws or regulations with respect to taking of these species is also a violation of the Endangered Species Act.

(3) No person shall possess, sell, deliver, carry, transport, ship, import, or export, by any means whatsoever, any such species taken in violation of applicable State fish and wildlife conservation laws or regulations.

(4) It is unlawful for any person to attempt to commit, solicit another to commit, or cause to be committed, any offense defined in paragraph (c) (1) through (3) of this section.

(5) Taking of these species for purposes other than those described in paragraph (c)(1) of this section, including taking incidental to carrying out otherwise lawful activities, is prohibited except when permitted under §§17.23 and 17.32.

Dated: December 31, 1986.

### P. Daniel Smith,

Acting Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 87–1282 Filed 1–20–87; 8:45 am]